



Week 4 Assignment: Model Classroom

Overview

In this assignment, after reading the Horizons Report 2009 K-12 Edition and watching a video, you will create a blueprint for a model classroom that should exist in five years.

Rubric

Use the following rubric to guide your work.

Tasks ↓	Exemplary	Satisfactory	Needs Improvement	Unsatisfactory
Academic Rigor	Ample evidence is presented demonstrating how the technological components (i.e. software) of this model classroom challenges students through use of all of the following: scaffolding, research-based inquiry methods, pacing, high-order thinking skills, and differentiated instruction. (Max. of 4 pts)	Some evidence is presented demonstrating how the technological components (i.e. software) of this model classroom will somewhat academically challenge students, using only one of the following: scaffolding, research-based inquiry methods, pacing, high-order thinking skills, and differentiated instruction. (Max. of 3 pts)	Little evidence is presented demonstrating how the technological components (i.e. software) of this model classroom academically challenges students, and does not use scaffolding, research-based inquiry methods, pacing, high-order thinking skills, or differentiated instruction. (Max. of 2 pts)	No evidence. (0 points)
Interoperability of Software/ Hardware	Ample evidence is presented demonstrating the model classroom's technological equipment is standardized, will operate on the local network, and will comply with network standards. (Max. of 4 pts)	Some evidence is presented demonstrating the model classroom's technological equipment is standardized, will operate on the local network, and will comply with network standards. (Max. of 3 pts)	Little evidence is presented demonstrating the model classroom's technological equipment is standardized, will operate on the local network, and will comply with network standards. (Max. of 2 pts)	No evidence.
Alignment with Standards, Objectives & Academic Disciplines	Ample evidence is presented demonstrating how the technological components of this model classroom directly target identified learning goal(s) aligned with the grade level content standards, objectives, and	Some evidence is presented demonstrating how the technological components of this model classroom marginally target identified learning goal(s) aligned with the grade level content standards, objectives, and academic	Little evidence is presented demonstrating how the technological components of this model classroom target identified learning goal(s) aligned with the grade level content standards, objectives, and academic	No evidence. (0 points)

	academic disciplines. (Max. of 4 pts)	disciplines. (Max. of 3 pts)	disciplines. (Max. of 2 pts)	
Alignment with District & Campus Technology Plans and Goals	Ample evidence is presented demonstrating that the technological components of this model classroom directly align with district and campus technology plans and goals. (Max. of 4 pts)	Some evidence is presented demonstrating that the technological components of this model classroom align with district and campus technology plans and goals. (Max. of 3 pts)	Little evidence is presented demonstrating that the technological components of this model classroom align with district and campus technology plans goals. (Max. of 2 pts)	No evidence. (0 points)
Authenticity	Ample evidence is presented demonstrating the technological components of this model classroom were selected based on both the authentic needs of the students and the authentic needs of the teachers. (Max. of 4 pts)	Some evidence is presented demonstrating the technological components of this model classroom were selected based on either the authentic needs of the students or the teacher, but not with consideration for both parties. (Max. of 3 pts)	Little evidence is presented demonstrating the technological components of this model classroom were selected based on the authentic needs of the students and/or the teacher. (Max. of 2 pts)	No evidence. (0 points)
Writing Elements: Content	Response demonstrates an in-depth examination and thorough understanding of the assignment through the inclusion of all components, and meets or exceeds all requirements indicated in the instructions. Each part of the assignment is addressed thoroughly. (Max. of 4 pts)	Response demonstrates a sound examination and adequate understanding of the assignment through the inclusion of some components, and meets all requirements indicated in the instructions. Each part of the assignment is addressed. (Max. of 3 pts)	Response demonstrates a limited examination and understanding of the assignment. Response is missing some components and/or does not fully meet the requirements indicated in the instructions. (Max. of 2 pts)	No examination or understanding of the assignment. (0 points)
Writing Elements: Style, Mechanics, & Grammar	The paper adheres to APA stylistic guidelines. Writing is clear, concise, and well organized. The paper has sound organization and excellent sentence/	The paper adheres loosely to APA stylistic guidelines. Writing is mostly clear, concise, and well organized. The paper has a thesis and good sentence/	The paper does not adhere to APA stylistic guidelines. Writing is unclear and/or disorganized. The thesis is weak, and sentence/paragraph	Does not use APA guidelines. No thesis. (0 points)

	<p>paragraph construction. Thoughts are expressed in a coherent and logical manner. There are no more than three spelling, grammar, or syntax errors per page of writing.</p> <p>(Max. of 4 pts)</p>	<p>paragraph construction. Thoughts are expressed in a coherent and logical manner. There are no more than five spelling, grammar, or syntax errors per page of writing.</p> <p>(Max. of 3 pts)</p>	<p>construction is poor. Thoughts are not expressed in a logical manner. There are more than five spelling, grammar, or syntax errors per page of writing.</p> <p>(Max. of 2 pts)</p>	
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Directions

Read or view the following Web links that you will use as the basis for this assignment:

The Horizons Report K-12 Edition: <http://www.nmc.org/pdf/2009-Horizon-Report-K12.pdf>

Possible Classroom of the Future:

http://www.youtube.com/watch?v=QcXEznPXj8k&feature=Playlist&p=4DAA0739CBF70FBC&index=11&playnext=2&playnext_from=PL

After you have viewed both links, create a blueprint for a model classroom that should exist in five years. Address each of the areas in the Horizons Report – Collaborative Environments, Online Communication Tools, Mobiles, Cloud Computing, Smart Objects and the Personal Web. Your blueprint should be in the form of a discussion paper.

Use the following guidelines:

- Use the *APA Style Guide*.
- Give your paper a title. Whatever title you choose, it should clearly and concretely reflect the content of your paper.
- Double-space your paper and use one-inch margins. Use a 12-point font. Use Times New Roman type. When complete, your review should be 500 to 700 words in length.
- Include a list of references, on its own page, at the end of the review. Use *APA* documentation for in-text citations and for the bibliographic citations in the references.
- Use a minimum of four research articles, chapters, or books to support your discussion paper.

Your paper is due no later than 11:59 p.m. on the seventh day of Week 4.

Workspace

Write your paper in the expandable box provided.

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LA VERNIA ISD MODEL CLASSROOM PROJECT

Model Classroom Project:

The Classroom of Tomorrow for La Vernia ISD

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In partial fulfillment of the requirements for EDLD 5362

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Based upon educational need, the La Vernia ISD Model Classroom of Tomorrow (MCoT) as described herein is presented as a proposed District standard for classroom technology implementation. The MCoT represents a classroom equipped with next-generation technological resources to enable advanced technology-based curriculum elements and collaborative learning environments in support of 21st century skills. The goal of the MCoT program is to deploy standardized classrooms District-wide within five years. Pilot classrooms can be established on some campuses within 18 months.

The MCoT classrooms have been designed to align to and comply with the goals and objectives in the La Vernia ISD Long Range Plan for Technology (LRPT), which itself is aligned to the Texas LRPT and the National Education Technology Plan. The MCoT is enabled by LVISD's advanced fiber-optic Gigabit Ethernet network backbone and our advanced Meru Intelligent Wireless Network. This pre-existing supporting infrastructure is critical; the Texas LRPT states in its Vision section that "The infrastructure of a school is the critical element of support for all four areas of this plan: teaching and learning; educator preparation and development; leadership, administration and instructional support; and infrastructure for technology." And that "...infrastructure is critical to provide equitable access to all learners."

The MCoT consists of standardized hardware, software and an enhanced curriculum that specifically address LVISD's LRPT as follows: "GOAL 1: Teaching and Learning - Utilize technology as a tool to foster improvement in academic achievement, curriculum integration,

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and increased accessibility and innovation.”; “OBJECTIVE 1.1: All students will become technology proficient and will use technology as a tool to improve academic achievement” and “OBJECTIVE 1.2: Teachers will integrate technology into the curriculum in all subject areas as appropriate, with special emphasis placed on the core content areas.” Support is also provided for the primary goal of NCLB (No Child Left Behind) Title II Part D, which is to improve student academic achievement through the use of technology in elementary and secondary schools.

The MCoT addresses composite District needs as identified on La Vernia ISD’s Texas Campus STaR (School Technology and Readiness) Charts in Key Area IV, Infrastructure for Technology; most campuses score at Level 2, Developing Tech in Focus Area INF1, Students per Computer and Focus Area INF6, Distance Learning Capacity. The Students per Computer issue is of special note as most classrooms currently have between 5 and 9 students per Internet-connected multimedia computer, making it difficult to support advanced online learning initiatives on a wide scale.

The instructional design of the MCoT will also address needs identified on LVISD STaR Charts in Key Area I, Teaching and Learning; student mastery of the TA-TEKS (Technology Applications – Texas Essential Knowledge and Skills) is low, there are few online learning opportunities, particularly those connected to the curriculum, and teachers primarily use technology to direct instruction, model technology skills, and direct students in the use of productivity applications for technology integration.

The MCoT has been designed to accommodate our modern students, generally referred to as Millennials or Digital Natives in current educational research. Howe and Strauss (2008) tell us that “To fire the imagination of Millennials, don’t describe education as a process in which subjects are merely “covered.” Instead, promise a journey whose end stage is the mastery of every skill they need to succeed at the next level. Then follow up on this promise by restructuring the curriculum...” (p. 72). To address this need, the MCoT will use standards-based instruction and supporting rubrics. The curriculum model will be based upon ISTE’s (International Society for Technology in Education) NETS (National Educational Technology Standards) framework of technology integration and implementation standards.

The curriculum will include new skills which must be emphasized to ensure students become independent, lifelong learners. Armstrong and Warlick (2004) tell us that the traditional “3-Rs” of school days past have now evolved into the “4-Es”; for Millennials, Reading has now transformed into Exposing Knowledge, ‘Riting has transformed into Expressing Ideas Compellingly, ‘Rithmetic has transformed into Employing Information, and a fourth “E”, Ethics, now becomes critical for students to evaluate and properly use all of the available information.

Prensky (2001) explains that “Digital Natives are used to receiving information really fast. They like to parallel process and multi-task. They prefer their graphics before their text rather than the opposite. They function best when networked. They thrive on instant gratification and

frequent rewards. They prefer games to “serious” work.”

In order to address their needs and learning styles, MCoT students will use collaborative Web 2.0 tools including wikis, blogs, and Google Documents, personal web tools including social networking and social bookmarking sites, and online communication tools including instant messaging and email as they as they work individually and collaboratively under teacher guidance to master their curriculum. Differentiation is supported through the use of various media resources and the text-to-speech software already available throughout the District, but MCoT teachers will also have access to an array of new technology tools allowing them to further differentiate by creating individualized assignments incorporating audio, video, text, and by readily bringing in distance education elements in support of the curriculum. The wide variety of electronic resources available in the MCoT classroom will also promote scaffolding as teachers can build data obtained electronically through various interactive and real-time technologies into the learning experience to reinforce key concepts.

In the MCoT, LVISD will encourage students to use their own technology tools to foster online learning. Some of these tools are not only unconventional by current standards, but until recently, were prohibited on most campuses. Prensky (2005) elaborates that “One of the most important tools for 21st century students is not the computer that we educators are trying so hard to integrate, but the cell phone that so many of our schools currently ban.” Instant Messaging will also be critical to future learning; Pitler, Hubbell, Kuhn and Malenoski (2007) observe that “Many schools have begun using the tremendous power of instant messaging to

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bring true experts into the classroom for curriculum-based conversations and feedback on student understanding. Simple and free programs like AIM and iChat allow two-way text conversations and even group conferencing without putting stress on a school's network.” (p. 57).

Students will be encouraged to bring and use their own personal mobile technology devices including smart phones, iPods, iPads/Kindle eBook Readers, and notebook or netbook computers in support of online learning. Students in La Vernia ISD are already allowed personal use access to our District-wide wireless network, and encouraging them to bring in their own digital native technology tools not only lessens their technology learning curve, but also encourages them to use their own devices educationally, extending learning opportunities. Additionally, making use of their own devices lessens the strain on District budgets as devices such as iPods only need to be inventoried in sufficient quantities to provide support for economically disadvantaged students who may not possess their own device.

However, a major consequence of this proliferation of individual devices is that each MCoT classroom will need far more electrical outlets to support the myriad charging devices and AC adaptors. These extra electrical outlets will be provided, depending upon building design, either as floor-mounted receptacles, ceiling-mounted retractable power stations or through the use of permanent “power poles”. A sufficient quantity of AC power outlets must be provided to facilitate use of at least fifty simultaneous rechargers or devices in each classroom.

Although each MCoT classroom will have a minimum of ten high-bandwidth copper Gigabit Ethernet ports available, the existing Meru Intelligent Wireless Network will serve as the primary MCoT connectivity infrastructure. LVISD chose Meru last year due to its next-generation design, providing high-bandwidth and high-quality streaming media and video conferencing to a multitude of simultaneous devices. Meru's "Intelligent Cell" design has proven more than capable of supporting high-volume, high-priority real-time traffic, enhancing the use of mobile computing devices.

In order to provide for more traditional technology interaction and to facilitate the use of District-licensed software that cannot legally be installed on student-owned devices, each MCoT classroom will be provided with a lockable, mobile cart containing 30 HP netbook computers. The HP netbooks shall be the latest version available, but equipped at minimum with 802.11n WiFi wireless Ethernet, HDMI/mDVI video ports, USB ports, 2GB RAM memory, 30GB internal storage and an eight-hour extended battery pack, as well as the highest-performance processor available at reasonable cost. As the netbooks will be used with La Vernia ISD's existing VMware vSphere Cloud Computing environment, extensive internal storage is not required as all student and administrative data is stored on and accessed from cloud-based network shares. A Microsoft operating system, Windows 7 or better, will be provided on each netbook to facilitate the use of traditional software applications such as Microsoft Office and to facilitate access to cloud- and web-based applications. The netbooks will support ongoing District initiatives for Cloud Computing and mobile technologies.

Student response and evaluation data will be gathered in the MCoT using a 30-unit iRespond Lite student response “clicker” system. The iRespond Lite system uses wireless, handheld, real-time remote units, and includes a "first responder" feature to foster classroom excitement and competition while still allowing teachers the ability to electronically assess individual students, collaborative teams, or their entire class.

Smart object support will be incorporated into the MCoT classroom. Using SmartCards, students and teachers can link access to controlled online accounts and databases to specific documents, applications and knowledgebases hosted on wikis or blogs, or even on personal websites such as Facebook. Privacy and data integrity are assured, as only users possessing the SmartCard have full access to the objects. Using RFID tags, teachers will also encode physical objects located in the MCoT classroom, such as world globes, science kits or instruments with data tags that allow students not only to determine where they are located and check them out for use, but also to learn about their properties, ways to operate and use the objects, and even innovative secondary uses or contextual information for the object that previous users have attached to them.

In support of digital projection, presentation and capture capabilities, each MCoT classroom will be equipped with one ceiling-mounted DLP-3DHD wireless projector with a fixed, retractable 16:9 aspect-ratio screen for use with netbooks or other devices, and one cart-based mobile presentation system including a document camera, a Mimio Pad for handheld smart board presentation use, an HP netbook and a DLP-HD projector with a portable 16:9 aspect-

ratio screen. Dry-erase boards will be mounted on the front and at least one side wall, and a wireless Mimio Bar smart board/capture device will be provided to allow capture of dry-erase brainstorming sessions as well as supplemental use as an additional smart board when coupled with the ceiling mounted projector. Two high-quality, wall-mounted, wireless IP-based video PTZ steerable cameras will be mounted in each classroom, on the front and rear walls, to support online communication and collaboration tools including video conferencing and distance education. One omnidirectional USB microphone and multiple high-quality headset/microphone combination units will be provided to enable either group or individual video conferencing and video production and editing capabilities.

Printing, text/OCR and image scanning capability in the MCoT classroom will be provided by a dedicated HP multifunction Color LaserJet CM3530 (or better) printer/scanner/copier, connected via one of the copper Gigabit Ethernet ports to the LVISD VMware server farm and our vSphere cloud. LVISD has already standardized on these multifunction printers due to their combination of high-speed, high-volume and low TCO (Total Cost of Ownership). As the CM3530's are true IP-based multifunction units, any technology device in the MCoT classroom including student-owned wired or wireless devices can access printing or scanning services.

A "technology toolkit" consisting of five Apple iPod Nano Video units with built-in video camera and five 10-megapixel digital cameras will be provided in each MCoT in support of student use of personal web applications including social networking and Web 2.0 tools.

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Finally, furniture in the MCoT classroom will consist of thirty sturdy but lightweight tabletop desks with wheeled chairs to facilitate easy reconfiguration of the classroom for large-group presentation, small-group collaboration or individualized task environments. A larger tabletop desk and wheeled chair will be provided for instructor use, although the instructor will normally be mobile, interacting with students, groups and devices, becoming the “guide on the side” facilitating student learning rather than the “sage on the stage” of our traditional classrooms.

The MCoT classroom builds upon the investment La Vernia ISD has already made in robust wireless infrastructure, VMware and vSphere Cloud Computing, and high-bandwidth, high-availability network backbone and Internet connectivity. Given the documented needs of our students, and our mission to prepare students to be lifelong learners who will excel in unknown future job markets, we cannot afford to pass up this opportunity to achieve educational excellence through the innovative application of instructional technology.

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